

XXIII. *On the Diurnal Lepidoptera described in Gmelin's Edition of the Systema Naturæ.* By W. F. KIRBY.

[Read 1st November, 1869.]

GMELIN's edition of Linnæus' *Systema Naturæ* contains a considerable number of new species of Diurnal *Lepidoptera*, most of which were previously described at greater length (but without names) by Zschach, in the Entomological portion of the *Museum Leskeanum*. These names and descriptions are never quoted, and therefore it may not be useless to give full descriptions of all such species as have not yet been satisfactorily identified, and indications of the others. The remains of Leske's collection are in the Museum of the Royal Dublin Society, but the greater number of the specimens have succumbed to the ravages of time and neglect. Nevertheless I have succeeded in recovering several of the types, most of which I have been able to identify, with the kind assistance of Mr. Hewitson. A few of the more obscure or damaged types I had not time to work out when in the neighbourhood of London; and one or two types which I had overlooked were detected after my return to Dublin. These latter, however, are of slight importance. Most of the types are numbered, and are therefore certain; but a few were incorrectly numbered, or not marked at all; wherever the smallest doubt about a type exists, it is indicated in the following pages.

Our collection is not sufficiently large for me to attempt to identify those species of which no types exist; but I quote Gmelin's names and Zschach's descriptions in full, hoping that if publicity is given to them, others may be enabled to do so. Unfortunately Zschach gives no localities, simply noting "europæus" or "exoticus," which will increase the difficulty of applying his descriptions.

It will be seen that in most cases Gmelin's names are merely synonyms, but in some instances they have priority, and a full claim to be restored.

I take the species in the order in which they occur in Gmelin, and where they have been satisfactorily identified, the names by which they will henceforth, in accordance with the law of priority, be known, are printed in capitals, and referred to the modern genera.

The references for Gmelin are to Linn. Syst. Nat. I. v. (ed. 13; 1788-1791): for Zschach to "Musei Leskeani Pars Entomologica," (Leipsic; 1788; three coloured plates)

## PAPILIO.

### \* EQUITES.

† † Achivi.

#### 1. *P. Argyrios*, Gmel. p. 2248.

*P. E. A.* alis dentatis, supra nigris, anticis fasciis duabus argenteis, postica nebulosa, subtus cœruleo-argenteis fasciis duabus, apice margineque postico unitis, fuscis, striæ transversæ, cœruleo-argenteæ versus basin, utrinque ad marginem crassiorem, alis posticis dentatis, dente intermedio reliquis longiore, supra fascia latiori argentea, maculisque 7 cœruleo-argenteis, lineola transversa interruptis ad marginem posticum; subtus cœruleo-argenteæ, in medio maculis tribus transversis æneis, unaque remota ad marginem internum, fasciisque duabus nigris, prima undata, altera dentata, margineque postico nigro, albo maculato, inter fasciam posticam et marginem maculæ cœruleo-argenteæ, anticis lineolis nigris interruptæ, maculæ tres dentatæ, nigrae, ad marginem internum versus angulum ani; abdomen subtus luteum. *Exoticus*. (Zschach, p. 87, n. 6.)

### \* \* HELICONII.

#### 2. *P. Sectator*, Gmel. p. 2250.

*P.* alis primoribus supra fuscis, fascia dilatiore transversa, posterioribus nigris, posterius albo cœruleoque punctatis.

*Meerb. Afb. t.* 10.

*Habitat* ———

(Gmel.)

A reference to Meerburgh (Afbeeldingen van zeldzaame gewassen; Leyden; 1775) would probably fix this species.

### \* \* \* PARNASSII.

#### 3. *P. hyalinus*, Gmel. p. 2259.

*P. Par.* alis rotundatis, posticis caudatis, fusco-hyalinis, anticis fascia lineari, obsoleta, subtus alba; posticis supra

basi cœrulescente, stria undata, nigra, terminata ocellis duobus nigris, pupilla alba, adjacente utrinque macula alba, aliisque dispersis circiter 15 albis, cœruleo-insidentibus; subtus fascia dimidia, annexa circulo macularum 6 albarum, punctulisque duobus; ocelli duo vividiores, antico majore. *Exoticus*. (Zschach, p. 88, n. 26.)

Probably a species of *Hætera*, or of one of the allied genera.

\* \* \* \* DANAI.

† Candidi.

4. PIERIS ISSE.

*Papilio Isse*, Cram. Pap. Ex. pl. 55, E. F. (1779),  
pl. 339, C. D. (1782).

*Papilio bicolor*, Gmel. p. 2261 = *Pap.* No. 31,  
Zschach, p. 88.

5. PIERIS DISCORS.

*Papilio discors*, Gmel. p. 2261 = *Pap.* No. 32,  
Zschach, p. 88.

*Papilio Plexaris*, Donovan. Ins. N. Holl. (1805).

*Cathæmia Anthyparete*, Hübn. Verz. p. 92 (1816).

*Pieris Philyra*, Godt. Enc. Méth. ix. 159 (1819).

6. PIERIS DORIMENE.

*Papilio Dorimene*, Cram. Pap. Ex. pl. 387, C. D.  
(1782).

*Papilio fuliginosus*, Gmel. p. 2261 = *Pap.* No. 34,  
Zschach, p. 88.

7. *Papilio chrysopterus*, Gmel. p. 2261.

P. D. C. alis rotundatis, utrinque flavis, anticis margine antico, postico latius nigris, intus sinuato; posticis margine postico nigris, subtus omnibus totis flavis. *Exoticus*. (Zschach, p. 89, n. 35.)

Almost certainly a species of *Terias*; but impossible to identify by the description.

† † Festivi.

7. EUPLŒA PHÆNARETA.

*Papilio Phænareta*, Schaller, Naturf. xxi. 177, pl. v (1785).

*Papilio affinis*, Gmel. p. 2289 = *Pap.* No. 46, Zschach, p. 89.

*Terpsichrois Alea*, Hübn. Verz. p. 16 (1816).

*Danaïs Prothoe*, Godt. Enc. Méth. ix. 177 (1819).

The type of Zschach, No. 46, is evidently the *Prothoe* of Godart; but Gmelin's name *affinis* cannot stand, as Mr. Butler and I have independently discovered that the *Phænareta* of Schaller is identical with *Prothoe*, and Schaller's description was prior to Gmelin's.

8. DANAUS LIMNIAE.

*Papilio Limniace*, Cram. Pap. Ex. pl. 59, D. E. (1779).

*Papilio exoticus*, Gmel. p. 2289 = *Pap.* No. 46b, Zschach, p. 89.

9. *Papilio claviger*, Gmel. p. 2289.

P. D. F. alis subintegris, fuscis, maculis punctisque albis, hyalinis, basi anticis longis, posticis radiatis, clavatis, marginibus posticis duplici serie punctorum alborum, subtus concolores. *Exoticus*. (Zschach, p. 89, n. 46c.)

The apparent type of this insect is very similar to, but not quite identical with, our specimen of *Danaus Juventa*, Cram.

10. DRUSILLA URANIA.

*Papilio Urania*, Linn. Mus. Lud. Ulr. p. 225 (1764).

*Papilio marinus* (misprint for *murinus*), Gmel. p. 2289 = *Pap.* No. 47, Zschach, p. 89.

The type agrees with the figure (*Papilio Jairus*) in Donovan's Insects of China.

11. EUPLŒA LEUCOSTICTOS.

*Papilio leucostictos*, Gmel. p. 2289 = *Pap.* No. 48, Zschach, p. 90.

*Limnas mutabilis* Nemertes, Hübn. Samml. Ex. Schmett. i. (1806-1816).

*Danaïs Eunice*, Godt. Enc. Méth. ix. 177 (1819).

12. *Papilio hexophthalmos*, Gmel. p. 2289.

P. D. F. alis subcaudatis, integerrimis, basi fulvis, anticis margine antico, præter basin, posticoque late nigro, maculis duabus fulvis, arcuque 5 punctorum alborum, subtus cinereo griseoque variæ, striga transversa, fusca, antice dentata, serieque punctorum, quorum sex ocelli obsoleti, alis posticis margine postico late nigris, ad angulum ani cauda brevi instructis, subtus striga fusca, et utrinque ocellis duobus nictitantibus. *Exoticus*. (Zschach, p. 90, n. 49.)

This belongs to the genus *Doleschallia*, of Felder, and Mr. Hewitson thinks that it may possibly be a female variety of *D. Bisaltide* (*Papilio Bisaltide*, Cram. pl. 102, C. D.) ; but it is much larger than the ordinary form of that species.

13. SIDERONE STRIGOSA.

*Papilio strigosus*, Gmel. p. 2290 = *Pap.* No. 55, Zschach, p. 90.

*Siderone Zethus*, Westw. in Dbl. & Hew. Gen. Di. Lep. p. 321, note (1850).

\* \* \* \* \* NYMPHALES.

† Gemmati.

14. DIADEMA PANDARUS.

*Papilio Pandarus*, Linn. Mus. Lud. Ulr. p. 198 (1764).

♀ *Papilio lacteolus*, Gmel. p. 2290 = *Pap.* No. 58b, Zschach, p. 90.

15. *Papilio bifasciatus*, Gmel. p. 2290.

N. G. alis angulatis, fuscis, subtus cinereis, strigis duabus communibus, fuscis, fasciaque lata, cinerea, communi, postice dentata, in qua series ocellorum fundo fusco, priorum 5 intermediis majoribus, posticarum sex, pupilla alba, iride lutea. *Exoticus*. (Zschach, p. 91, n. 59).

One of the *Satyrinæ*. A fragment of one of the types is still in existence ; but I have not yet succeeded in identifying it.

† † Phalerati.

16. *Papilio Sulpitia*, Gmel. p. 2336.

N. P. alis dentatis, concoloribus, atris, subtus fuscis, anticis disco punctulis duobus albis, uno pone alterum, pone discum duo paria macularum albidarum, punctaque 7 ad marginem posticum, subtus basi linea alba, bis interrupta, ad marginem posticum series gemina lunularum albarum ; alæ posticæ fascia e maculis 7 albis punctulisque tribus, postice versus marginem anticum, subtus eadem fascia serieque triplici lunularum albarum ad marginem posticum. *Exoticus*. (Zschach, p. 92, n. 88.)

17. *Papilio Vidua*, Gmel. p. 2336.

N. P. alis dentatis, nigris, anticis macula magna, ovata, oblique posita, ad apicem minore alba, pellucida, subtus basi luteæ, punctis tribus albis, ad marginem anticum, margo posticus bis lunulatus ; alis posticis disco albo, pellucido, lunula rufa, tribusque cœruleis ad angulum ani, subtus basi luteo-fuscis, puncto nigro, in medio fascia lata, alba, lunula nigra, ad marginem anticum dein fascia lutea, punctis ferrugineis, margo posticus cœruleus, striis duabus nigris, undulatis, extrema albo-sinuata. *Exoticus*. (Zschach, p. 92, n. 89.)

\* \* \* \* \* PLEBEJI.

† Rurales.

18. *Papilio Barbarus*, Gmel. p. 2352.

P. alis ecaudatis cærulescentibus, subtus undique fusco maculatis ; ocellis posterioribus duobus.

*Habitat* Algiriæ, *Argiolo* minor. (Gmel.)

A species of *Polyommatus*, which the locality will perhaps aid in identifying.

19. *Papilio annulatus*, Gmel. p. 2359.

P. R. alis caudatis, cœrulescentibus, anticis macula fusca, annulo cœruleo, margineque postico fusco, posticis margine antico, subtus cinerascens, lineis tribus transversis, undatis, albis ad marginem posticum, punctoque ani gemino, fulvo, disco nigro. *Exoticus*. (Zschach, p. 93, n. 123.)

A species of *Thecla*. The type has not yet been identified.

20. *Papilio oculatus*, Gmel. p. 2359.

P. R. alis ecaudatis, supra fuscis, disco cœruleis, maculis obsoletis, atris, subtus fusco-canis, punctis ocellaribus, disco lunula, area primoribus 5-6, posticis 8, ad basin unico, marginalibus 6 plerumque obsoletis. *Europæus*. (Zschach, p. 93, n. 131.)

21. *Papilio lunulatus*, Gmel. p. 2359.

P. R. alis ecaudatis, fuscis, disco cœrulescentibus, obsolete maculatis, subtus fusco-cinereis, disco lunula arcuque punctorum ocellarium, priorum 5, posticarum 7. *Europæus*. (Zschach, p. 93, n. 132.)

If the expressions "maculis obsoletis" and "obsolete maculatis," occurring in this and the preceding description, may be considered to indicate that these two species belong to the *Arion* group, their identification will be easy; otherwise I fear we can hardly expect to recognize them among the mass of European species of *Polyommatus*.

† † Urbicolæ.

22. *Papilio Æthiops*, Gmel. p. 2360.

P. U. alis integris atris, prioribus supra fasciis tribus fenestratis albis, maculisque cœruleis, ad angulum posticum, posticis basi striis duabus longitudinalibus, pallidis, strigaeque transversa 5 punctorum cœruleorum, sinus externus internusque apicis albi, subtus basi fasciæ duæ transversæ, pallidæ, antica communi, dein duæ cœruleæ, sinus albidæ; collare punctis 4 albis, thorax fasciis 4 longitudinalibus, internis cœruleis, externis pallidis; abdomen nigro luteoque annulatum, linea dorsali nigra. *Exoticus*. (Zschach, p. 94, n. 154.)



A species unknown to Mr. Hewitson. The type having lost its antennæ, the genus cannot be ascertained from it with absolute certainty; probably it is a *Pyrrophoga*.

23. *Papilio bipunctatus*, Gmel. p. 2360.

P. U. alis integris, fuscis, anticis utrinque fascia obliqua, argentea, punctisque duobus minimis ad marginem anticum, posticis subtus basi fascia striaque lutescente. *Exoticus*. (Zschach, p. 94, n. 160.)

The type of this species is in existence, and I hope to be able to verify it.

24. *Papilio fenestratus*, Gmel. p. 2360.

P. U. alis integris, fusco-luteis, disco punctis fenestratis tribus, versus apicem ad marginem anticum tribus minoribus. *Exoticus*. (Zschach, p. 95, n. 161.)

The type of this is so broken that there is but little chance of verifying the species.

Zschach quotes Linnæus and Fabricius, but not Cramer or any other authors; in fact, he would seem to have been quite unacquainted with Cramer's work, as it will be noticed that he redescribes several species figured in Pap. Exot.

I may add that Leske's collection was purchased for the Royal Dublin Society at the end of last century. The *Lepidoptera Heterocera* are all destroyed or seem unrecognizable. There are, however, a good many *Coleoptera*, &c., still in existence.

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